

=====

Sequence Listing was accepted.

If you need help call the Patent Electronic Business Center at (866)
217-9197 (toll free).

Reviewer: Anne Corrigan

Timestamp: [year=2009; month=5; day=7; hr=15; min=2; sec=57; ms=396;]

=====

Application No: 10584362 Version No: 2.0

Input Set:**Output Set:**

Started: 2009-05-01 08:41:20.339
Finished: 2009-05-01 08:41:25.191
Elapsed: 0 hr(s) 0 min(s) 4 sec(s) 852 ms
Total Warnings: 30
Total Errors: 0
No. of SeqIDs Defined: 30
Actual SeqID Count: 30

| Error code | Error Description |
|------------|---|
| W 402 | Undefined organism found in <213> in SEQ ID (1) |
| W 402 | Undefined organism found in <213> in SEQ ID (2) |
| W 402 | Undefined organism found in <213> in SEQ ID (3) |
| W 402 | Undefined organism found in <213> in SEQ ID (4) |
| W 402 | Undefined organism found in <213> in SEQ ID (5) |
| W 213 | Artificial or Unknown found in <213> in SEQ ID (6) |
| W 213 | Artificial or Unknown found in <213> in SEQ ID (7) |
| W 213 | Artificial or Unknown found in <213> in SEQ ID (8) |
| W 213 | Artificial or Unknown found in <213> in SEQ ID (9) |
| W 213 | Artificial or Unknown found in <213> in SEQ ID (10) |
| W 213 | Artificial or Unknown found in <213> in SEQ ID (11) |
| W 402 | Undefined organism found in <213> in SEQ ID (12) |
| W 402 | Undefined organism found in <213> in SEQ ID (13) |
| W 402 | Undefined organism found in <213> in SEQ ID (14) |
| W 402 | Undefined organism found in <213> in SEQ ID (15) |
| W 402 | Undefined organism found in <213> in SEQ ID (16) |
| W 213 | Artificial or Unknown found in <213> in SEQ ID (17) |
| W 213 | Artificial or Unknown found in <213> in SEQ ID (18) |
| W 213 | Artificial or Unknown found in <213> in SEQ ID (19) |
| W 213 | Artificial or Unknown found in <213> in SEQ ID (20) |

Input Set:

Output Set:

Started: 2009-05-01 08:41:20.339
Finished: 2009-05-01 08:41:25.191
Elapsed: 0 hr(s) 0 min(s) 4 sec(s) 852 ms
Total Warnings: 30
Total Errors: 0
No. of SeqIDs Defined: 30
Actual SeqID Count: 30

| Error code | Error Description |
|------------|---|
| W 213 | Artificial or Unknown found in <213> in SEQ ID (21) |
| W 213 | Artificial or Unknown found in <213> in SEQ ID (22) |
| W 213 | Artificial or Unknown found in <213> in SEQ ID (23) |
| W 213 | Artificial or Unknown found in <213> in SEQ ID (24) |
| W 213 | Artificial or Unknown found in <213> in SEQ ID (25) |
| W 213 | Artificial or Unknown found in <213> in SEQ ID (26) |
| W 402 | Undefined organism found in <213> in SEQ ID (27) |
| W 402 | Undefined organism found in <213> in SEQ ID (28) |
| W 402 | Undefined organism found in <213> in SEQ ID (29) |
| W 402 | Undefined organism found in <213> in SEQ ID (30) |

SEQUENCE LISTING

<110> Bos, Martine Petronella
 Poolman, Jan
 Tefsen, Boris
 Tommassen, Johannes Petrus Maria

<120> OUTER MEMBRANE VESICLES AND USES THEREOF

<130> VB60639

<140> 10584362

<141> 2006-06-23

<150> PCT/EP2004/014770

<151> 2004-12-21

<150> GB 0329827.0

<151> 2003-12-23

<150> GB 0416398.6

<151> 2004-07-22

<160> 30

<170> FastSEQ for Windows Version 4.0

<210> 1

<211> 802

<212> PRT

<213> Neisseria

<400> 1

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Ala | Arg | Leu | Phe | Ser | Leu | Lys | Pro | Leu | Val | Leu | Ala | Leu | Gly | Leu |
| 1 | | | | 5 | | | | | 10 | | | | | 15 | |
| Cys | Phe | Gly | Thr | His | Cys | Ala | Ala | Ala | Asp | Ala | Val | Ala | Ala | Glu | Glu |
| | | 20 | | | | | | 25 | | | | | 30 | | |
| Thr | Asp | Asn | Pro | Thr | Ala | Gly | Glu | Ser | Val | Arg | Ser | Val | Ser | Glu | Pro |
| | | 35 | | | | | 40 | | | | | 45 | | | |
| Ile | Gln | Pro | Thr | Ser | Leu | Ser | Leu | Gly | Ser | Thr | Cys | Leu | Phe | Cys | Ser |
| | 50 | | | | | 55 | | | | | 60 | | | | |
| Asn | Glu | Ser | Gly | Ser | Pro | Glu | Arg | Thr | Glu | Ala | Ala | Val | Gln | Gly | Ser |
| 65 | | | | | 70 | | | | 75 | | | | | 80 | |
| Gly | Glu | Ala | Ser | Ile | Pro | Glu | Asp | Tyr | Thr | Arg | Ile | Val | Ala | Asp | Arg |
| | | | | 85 | | | | 90 | | | | | | 95 | |
| Met | Glu | Gly | Gln | Ser | Gln | Val | Gln | Val | Arg | Ala | Glu | Gly | Asn | Val | Val |
| | | | 100 | | | | | 105 | | | | | 110 | | |
| Val | Glu | Arg | Asn | Arg | Thr | Thr | Leu | Asn | Thr | Asp | Trp | Ala | Asp | Tyr | Asp |
| | | 115 | | | | | 120 | | | | | | 125 | | |
| Gln | Ser | Gly | Asp | Thr | Val | Thr | Ala | Gly | Asp | Arg | Phe | Ala | Leu | Gln | Gln |
| | 130 | | | | | | 135 | | | | | | 140 | | |
| Asp | Gly | Thr | Leu | Ile | Arg | Gly | Glu | Thr | Leu | Thr | Tyr | Asn | Leu | Glu | Gln |
| 145 | | | | | 150 | | | | | 155 | | | | | 160 |

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|--|
| Gln | Thr | Gly | Glu | Ala | His | Asn | Val | Arg | Met | Glu | Ile | Glu | Gln | Gly | Gly | | |
| | | | | 165 | | | | | 170 | | | | | 175 | | | |
| Arg | Arg | Leu | Gln | Ser | Val | Ser | Arg | Thr | Ala | Glu | Met | Leu | Gly | Glu | Gly | | |
| | | | 180 | | | | | 185 | | | | | 190 | | | | |
| His | Tyr | Lys | Leu | Thr | Glu | Thr | Gln | Phe | Asn | Thr | Cys | Ser | Ala | Gly | Asp | | |
| | | 195 | | | | | 200 | | | | | 205 | | | | | |
| Ala | Gly | Trp | Tyr | Val | Lys | Ala | Ala | Ser | Val | Glu | Ala | Asp | Arg | Glu | Lys | | |
| | 210 | | | | | 215 | | | | | 220 | | | | | | |
| Gly | Ile | Gly | Val | Ala | Lys | His | Ala | Ala | Phe | Val | Phe | Gly | Gly | Val | Pro | | |
| 225 | | | | | 230 | | | | | 235 | | | | | 240 | | |
| Ile | Phe | Tyr | Thr | Pro | Trp | Ala | Asp | Phe | Pro | Leu | Asp | Gly | Asn | Arg | Lys | | |
| | | | | 245 | | | | | 250 | | | | | 255 | | | |
| Ser | Gly | Leu | Leu | Val | Pro | Ser | Leu | Ser | Ala | Gly | Ser | Asp | Gly | Val | Ser | | |
| | | | 260 | | | | | 265 | | | | | 270 | | | | |
| Leu | Ser | Val | Pro | Tyr | Tyr | Phe | Asn | Leu | Ala | Pro | Asn | Leu | Asp | Ala | Thr | | |
| | | 275 | | | | | 280 | | | | | | 285 | | | | |
| Phe | Ala | Pro | Ser | Val | Ile | Gly | Glu | Arg | Gly | Ala | Val | Phe | Asp | Gly | Gln | | |
| | 290 | | | | | 295 | | | | | 300 | | | | | | |
| Val | Arg | Tyr | Leu | Arg | Pro | Asp | Tyr | Ala | Gly | Gln | Ser | Asp | Leu | Thr | Trp | | |
| 305 | | | | | 310 | | | | | 315 | | | | | 320 | | |
| Leu | Pro | His | Asp | Lys | Lys | Ser | Gly | Arg | Asn | Asn | Arg | Tyr | Gln | Ala | Lys | | |
| | | | | 325 | | | | | 330 | | | | | 335 | | | |
| Trp | Gln | His | Arg | His | Asp | Ile | Ser | Asp | Thr | Leu | Gln | Ala | Gly | Val | Asp | | |
| | | 340 | | | | | | 345 | | | | | 350 | | | | |
| Phe | Asn | Gln | Val | Ser | Asp | Ser | Gly | Tyr | Tyr | Arg | Asp | Phe | Tyr | Gly | Asn | | |
| | 355 | | | | | 360 | | | | | 365 | | | | | | |
| Lys | Glu | Ile | Ala | Gly | Asn | Val | Asn | Leu | Asn | Arg | Arg | Val | Trp | Leu | Asp | | |
| | 370 | | | | 375 | | | | | | 380 | | | | | | |
| Tyr | Gly | Gly | Arg | Ala | Ala | Gly | Gly | Ser | Leu | Asn | Ala | Gly | Leu | Ser | Val | | |
| 385 | | | | | 390 | | | | | 395 | | | | | 400 | | |
| Leu | Lys | Tyr | Gln | Thr | Leu | Ala | Asn | Gln | Ser | Gly | Tyr | Lys | Asp | Lys | Pro | | |
| | | | 405 | | | | | 410 | | | | | 415 | | | | |
| Tyr | Ala | Leu | Met | Pro | Arg | Leu | Ser | Val | Glu | Trp | Arg | Lys | Asn | Thr | Gly | | |
| | | 420 | | | | | | 425 | | | | | 430 | | | | |
| Arg | Ala | Gln | Ile | Gly | Val | Ser | Ala | Gln | Phe | Thr | Arg | Phe | Ser | His | Asp | | |
| | | 435 | | | | | 440 | | | | | 445 | | | | | |
| Ser | Arg | Gln | Asp | Gly | Ser | Arg | Leu | Val | Val | Tyr | Pro | Asp | Ile | Lys | Trp | | |
| | 450 | | | | | 455 | | | | | 460 | | | | | | |
| Asp | Phe | Ser | Asn | Ser | Trp | Gly | Tyr | Val | Arg | Pro | Lys | Leu | Gly | Leu | His | | |
| 465 | | | | | 470 | | | | | 475 | | | | | 480 | | |
| Ala | Thr | Tyr | Tyr | Ser | Leu | Asn | Arg | Phe | Gly | Ser | Gln | Glu | Ala | Arg | Arg | | |
| | | | 485 | | | | | 490 | | | | 495 | | | | | |
| Val | Ser | Arg | Thr | Leu | Pro | Ile | Val | Asn | Ile | Asp | Ser | Gly | Ala | Thr | Phe | | |
| | | 500 | | | | | | 505 | | | | 510 | | | | | |
| Glu | Arg | Asn | Thr | Arg | Met | Phe | Gly | Gly | Glu | Val | Leu | Gln | Thr | Leu | Glu | | |
| | 515 | | | | | | 520 | | | | | 525 | | | | | |
| Pro | Arg | Leu | Phe | Tyr | Asn | Tyr | Ile | Pro | Ala | Lys | Ser | Gln | Asn | Asp | Leu | | |
| | 530 | | | | | 535 | | | | | 540 | | | | | | |
| Pro | Asn | Phe | Asp | Ser | Ser | Glu | Ser | Ser | Phe | Gly | Tyr | Gly | Gln | Leu | Phe | | |
| 545 | | | | | 550 | | | | | 555 | | | | | 560 | | |
| Arg | Glu | Asn | Leu | Tyr | Tyr | Gly | Asn | Asp | Arg | Ile | Asn | Thr | Ala | Asn | Ser | | |
| | | | 565 | | | | | 570 | | | | | 575 | | | | |
| Leu | Ser | Ala | Ala | Val | Gln | Ser | Arg | Ile | Leu | Asp | Gly | Ala | Thr | Gly | Glu | | |
| | | 580 | | | | | | 585 | | | | | 590 | | | | |
| Glu | Arg | Phe | Arg | Ala | Gly | Ile | Gly | Gln | Lys | Phe | Tyr | Phe | Lys | Asp | Asp | | |
| | 595 | | | | | | 600 | | | | | 605 | | | | | |
| Ala | Val | Met | Leu | Asp | Gly | Ser | Val | Gly | Lys | Lys | Pro | Arg | Asn | Arg | Ser | | |

| | | |
|---------------------|-------------------------|---------------------|
| 610 | 615 | 620 |
| Asp Trp Val Ala Phe | Ala Ser Gly Ser Ile Gly | Ser Arg Phe Ile Leu |
| 625 | 630 | 635 |
| Asp Ser Ser Ile His | Tyr Asn Gln Asn Asp Lys | Arg Ala Glu Asn Tyr |
| 645 | 650 | 655 |
| Ala Val Gly Ala Ser | Tyr Arg Pro Ala Gln Gly | Lys Val Leu Asn Ala |
| 660 | 665 | 670 |
| Arg Tyr Lys Tyr Gly | Arg Asn Glu Lys Ile Tyr | Leu Lys Ser Asp Gly |
| 675 | 680 | 685 |
| Ser Tyr Phe Tyr Asp | Lys Leu Ser Gln Leu Asp | Leu Ser Ala Gln Trp |
| 690 | 695 | 700 |
| Pro Leu Thr Arg Asn | Leu Ser Ala Val Val Arg | Tyr Asn Tyr Gly Phe |
| 705 | 710 | 715 |
| Glu Ala Lys Lys Pro | Ile Glu Val Leu Ala Gly | Ala Glu Tyr Lys Ser |
| 725 | 730 | 735 |
| Ser Cys Gly Cys Trp | Gly Ala Gly Val Tyr Ala | Gln Arg Tyr Val Thr |
| 740 | 745 | 750 |
| Gly Glu Asn Thr Tyr | Lys Asn Ala Val Phe Phe | Ser Leu Gln Leu Lys |
| 755 | 760 | 765 |
| Asp Leu Ser Ser Val | Gly Arg Asn Pro Ala Asp | Arg Met Asp Val Ala |
| 770 | 775 | 780 |
| Val Pro Gly Tyr Ile | Thr Ala His Ser Leu Ser | Ala Gly Arg Asn Lys |
| 785 | 790 | 795 |
| Arg Pro | | 800 |

<210> 2
 <211> 621
 <212> PRT
 <213> N. meningitidis

<400> 2

| |
|---|
| Met Ile Glu Lys Leu Thr Phe Gly Leu Phe Lys Lys Glu Asp Ala Arg |
| 1 5 10 15 |
| Ser Phe Met Arg Leu Met Ala Tyr Val Arg Pro Tyr Lys Ile Arg Ile |
| 20 25 30 |
| Val Ala Ala Leu Ile Ala Ile Phe Gly Val Ala Ala Thr Glu Ser Tyr |
| 35 40 45 |
| Leu Ala Ala Phe Ile Ala Pro Leu Ile Asn His Gly Phe Ser Ala Pro |
| 50 55 60 |
| Ala Ala Pro Pro Glu Leu Ser Ala Ala Ala Gly Ile Ile Ser Thr Leu |
| 65 70 75 80 |
| Gln Asn Trp Arg Glu Gln Phe Thr Tyr Met Val Trp Gly Thr Glu Asn |
| 85 90 95 |
| Lys Ile Trp Thr Val Pro Leu Phe Leu Ile Ile Leu Val Val Ile Arg |
| 100 105 110 |
| Gly Ile Cys Arg Phe Thr Ser Thr Tyr Leu Met Thr Trp Val Ser Val |
| 115 120 125 |
| Met Thr Ile Ser Lys Ile Arg Lys Asp Met Phe Ala Lys Met Leu Thr |
| 130 135 140 |
| Leu Ser Ser Arg Tyr His Gln Glu Thr Pro Ser Gly Thr Val Leu Met |
| 145 150 155 160 |
| Asn Met Leu Asn Leu Thr Glu Gln Ser Val Ser Asn Ala Ser Asp Ile |
| 165 170 175 |
| Phe Thr Val Leu Thr Arg Asp Thr Met Ile Val Thr Gly Leu Thr Ile |
| 180 185 190 |

$\langle 210 \rangle$ 3

<211> 1866
<212> DNA
<213> N. meningitidis

<400> 3

```
atgatagaaa aactgacttt cggactgttt aaaaaagaag acgcgcgcag ctttatgcgc 60
ctgatggcgt acgtccgccc ctacaaaatc cgcacgttg cgcacctgat tgccattttc 120
ggcggttgccg ccaccgaaaag ctaccttgcc gccttcacgc cccacctgat taaccacggc 180
ttttccgcac ctgccgcgcc gcccgagctg tctgccgcgc cgggcatcat ttccaccctg 240
caaaactggc gccaacagtt tacctatatg gtttggggga cggaaaacaa aatctggacc 300
gtcccgtctc tcctcatcat cctcgtcgtc atcgtggca tctgccgctt taccagcacc 360
tatctgatga cttgggtctc cgtgatgacc atcagcaaaa tccgcaaaga tatgtttgcc 420
aaaatgctga ccctttcctc ccgtaccat caggaaacgc cgtccggcac cgtactgatg 480
aatatgctca acctgaccga acagtgcgtc agcaacgcca gcgacatctt caccgtcctc 540
acgcgcgcaca cgatgatcgt taccggcctg accatcgctc tgctttacct caactggcag 600
ctcagcctca tcgtcgtcct gatgttcccc ctgctctccc tgctctcgcg ctactaccgc 660
gaccgtctga aacacgtcat ttccgactcg caaaaaagca taggcacgat gaacaacgtg 720
attgccgaaa cccatcaggg acaccgcgtc gtcaagctgt tcaacgggca ggcgcaggcg 780
gcaaaccggt tcgacgcggt caaccgcacc atcgtccgcc tcagcaaaaa aatcacgcag 840
gcaacggcgg cacattcccc gttcagcgaa ctgacgcct cgatcgccct cgccgtcgtc 900
atcttcacgc ccctgtggca aagccaaaac ggctacacca ccatcggcga atttatggca 960
ttcatcgtcg cgatgctgca aatgtacgcc cccatcaaaa gccttgccaa catcagcatc 1020
cctatgcaga cgatgttctc cgccgccgac ggtgtatgtg catttctcga caccgccccc 1080
gaacaggaca agggcacgct cgcaccgcag cgtgtcgaag ggcgcatcag ctcccgcaac 1140
gtcgatgtcg aatacgttc agacggcatc aaagccctcg acaacttcaa cctcgacatc 1200
agacaaggcg aacgcgtcgc cctggtcgga cgttcgggca gcggcaaatc caccgtcgtc 1260
aacctgctgc ccgcttttgt cgaaccgtct gccggcaaca tctgcataga cggtatcgac 1320
atcgccgaca tcaaactcga ctgcctgcgc gcccaattcg ccctcgtctc ccaagacgta 1380
ttcctgtttg acgacaccct gtttgaaaac gtccgataca gccgtcccga cgcggggcga 1440
gccgaagtcc tgttcgccct ccaaaccgcc aacctgcaaa gcctgattga cagctccccg 1500
ctcggaactgc accagcccat cggatcgaaac ggacgaact tatccggcgg acagcggcaa 1560
cgcgtcgcca ttgccgcgc cattttgaaa gacgcgcgga tattattatt ggacgaagcc 1620
accagcgcac tagacaacga atccgaacgc ctcgtccaac aggcgctcga acgctgatg 1680
gaaaaccgca ccggcatcat cgtcgccac cgctgacca ccatcgaagg ggccgaccgc 1740
atcatcgtga tggacgacgg caaaatcatc gaacaaggca cacacgaaca actgatgtcc 1800
caaaacggtt actacacgat gttacgcaat atctcaaa aagatgccgc cgtccggacg 1860
gcataa 1866
```

<210> 4
<211> 623
<212> PRT
<213> B. parapertussis

<400> 4

```
Met Leu Ala Trp Arg Pro Gly Arg Pro Asp Gly Cys Gln Ala Ala Gly
 1             5             10             15
Gly Arg Arg Tyr Asn Pro Gly His Asp Cys Ile Lys Ala Ser Val Ser
      20             25             30
Leu Asn Ser Ala Ala Arg Asn Ala Pro Ala Gly Ser Gln Pro Val Lys
      35             40             45
Ala Glu Leu Trp Lys Arg Val Tyr Ser Arg Val Gly Ser Tyr Trp Lys
      50             55             60
Gly Leu Val Leu Ala Val Leu Leu Met Ala Gly Ala Ala Ala Thr Gln
      65             70             75             80
Pro Thr Leu Ala Val Ile Met Lys Pro Leu Leu Asp Asp Gly Phe Ser
      85             90             95
Gly Ala Lys Pro His Tyr Val Trp Phe Leu Pro Leu Ala Val Val Gly
```

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|--|
| | | | | 100 | | | | 105 | | | | 110 | | | | | |
| Leu | Ile | Leu | Leu | Arg | Gly | Ile | Cys | Asn | Phe | Phe | Ser | Asp | Tyr | Leu | Leu | | |
| | | 115 | | | | | | 120 | | | | 125 | | | | | |
| Ala | Trp | Val | Ala | Asn | Asn | Val | Leu | Arg | Gly | Ile | Arg | Gly | Glu | Met | Phe | | |
| | 130 | | | | | | 135 | | | | 140 | | | | | | |
| Glu | Arg | Leu | Leu | Gly | Leu | Pro | Asp | Ala | Asp | Phe | Lys | Arg | Gly | Asp | Thr | | |
| 145 | | | | 150 | | | | | | 155 | | | | 160 | | | |
| Gly | Arg | Leu | Leu | Asn | Arg | Phe | Thr | Ile | Asp | Ala | Gly | Asn | Val | Thr | Gly | | |
| | | | | 165 | | | | | | 170 | | | | 175 | | | |
| Tyr | Ala | Thr | Asp | Val | Ile | Thr | Val | Leu | Val | Arg | Glu | Thr | Leu | Val | Val | | |
| | | | 180 | | | | | | 185 | | | | 190 | | | | |
| Ile | Ala | Leu | Ile | Gly | Val | Leu | Leu | Tyr | Met | Ser | Trp | Ala | Leu | Thr | Leu | | |
| | 195 | | | | | | 200 | | | | 205 | | | | | | |
| Ile | Ile | Leu | Val | Met | Leu | Pro | Val | Ser | Val | Gly | Ile | Ala | Arg | Ala | Phe | | |
| | 210 | | | | | | 215 | | | | 220 | | | | | | |
| Thr | Arg | Arg | Leu | Arg | Arg | Ile | Asn | Arg | Glu | Thr | Val | Asn | Met | Asn | Ala | | |
| 225 | | | | 230 | | | | | | 235 | | | | 240 | | | |
| Glu | Leu | Thr | Arg | Val | Val | Ser | Glu | Gly | Ile | Asp | Gly | Gln | Arg | Val | Ile | | |
| | | | | 245 | | | | | | 250 | | | | 255 | | | |
| Lys | Leu | Phe | Asp | Gly | Tyr | Asp | Ala | Glu | Arg | Arg | Arg | Phe | Asp | Phe | Val | | |
| | | | 260 | | | | | | 265 | | | | 270 | | | | |
| Asn | Ser | Arg | Leu | Arg | Arg | Phe | Ala | Met | Arg | Ser | Ala | Thr | Ala | Asp | Ala | | |
| | 275 | | | | | | 280 | | | | 285 | | | | | | |
| Ala | Leu | Thr | Pro | Leu | Thr | Gln | Val | Cys | Ile | Ser | Val | Ala | Val | Gly | Ala | | |
| | 290 | | | | | | 295 | | | | 300 | | | | | | |
| Val | Ile | Ala | Val | Ala | Leu | Ser | Gln | Ala | Asn | Ser | Gly | Ala | Leu | Thr | Val | | |
| 305 | | | | 310 | | | | | | 315 | | | | 320 | | | |
| Gly | Ser | Phe | Ala | Ser | Phe | Met | Ala | Ala | Leu | Ala | Gln | Ile | Phe | Asp | Pro | | |
| | | | | 325 | | | | | | 330 | | | | 335 | | | |
| Ile | Lys | Arg | Leu | Thr | Asn | Leu | Ala | Gly | Lys | Met | Gln | Lys | Met | Leu | Val | | |
| | 340 | | | | | | 345 | | | | 350 | | | | | | |
| Ala | Ala | Glu | Ser | Val | Phe | Thr | Leu | Val | Asp | Gln | Thr | Pro | Glu | Ala | Asp | | |
| | 355 | | | | | | 360 | | | | 365 | | | | | | |
| Ala | Gly | Thr | Arg | Ala | Leu | Pro | Glu | Pro | Val | Arg | Gly | Lys | Val | Glu | Phe | | |
| | 370 | | | | | | 375 | | | | 380 | | | | | | |
| Arg | Ala | Val | Ser | His | Arg | Phe | Pro | Asp | Ala | Asp | Arg | Asp | Thr | V | | | |